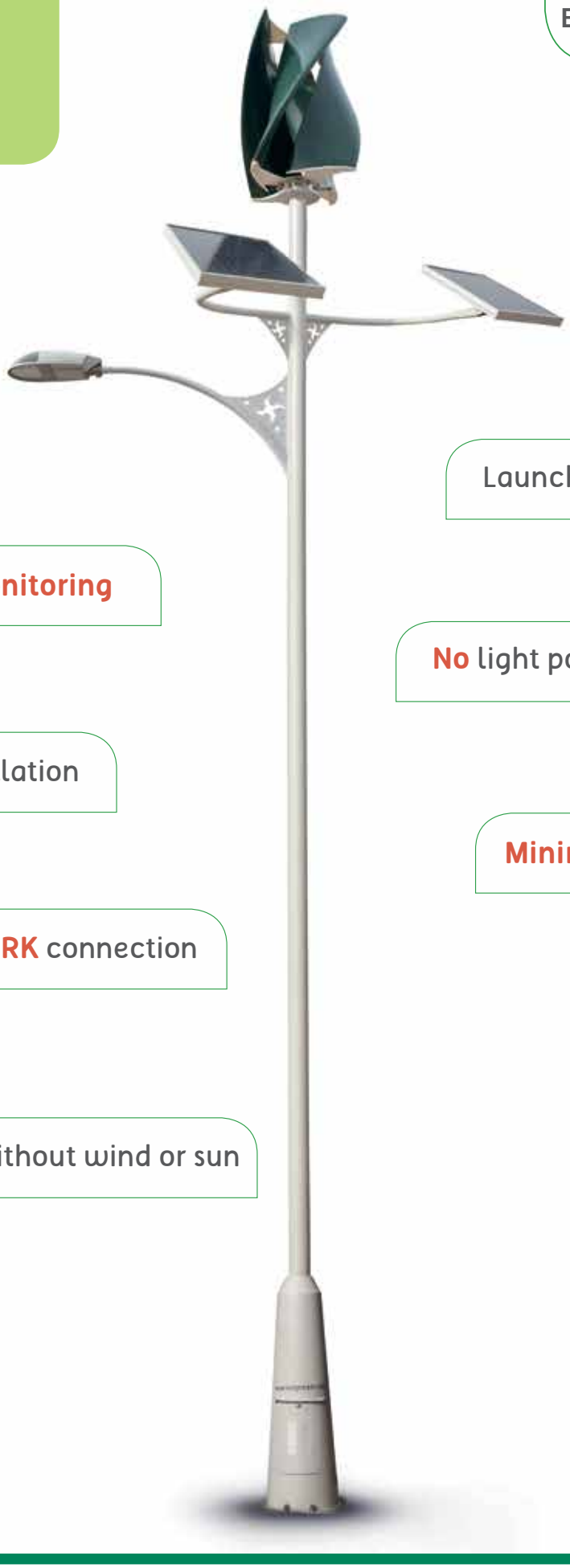
THE MOST SUSTAINABLE ENERGY FOR URBAN ILLUMINATION

ZERO CO_2 Emisión

ZERO ENERGY COSTS



Launch speed **1'4 m/s**

Remote **monitoring**

No light pollution

Inmediate installation

Minimum maintenance

No NETWORK connection

58h. autonomy without wind or sun

Urban roads

Parks and gardens

Interurban roads

Highways

Made in Spain

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Making the best of both worlds

An innovative hybrid power generation system recently installed in a Mount Roskill car park is causing quite a stir

Residents and visitors entering the Jasper Avenue Car Park often gaze at the lighting tower, watch the turbine rotating and wonder if it's a new form of communication system.

However, the intriguing installation is, in fact, a combined wind and solar lighting system that ensures totally autonomous operation. "The Eolgreen hybrid street lighting system is the first of its kind in Australasia and the low-speed wind turbine system is the only one of its kind in the world," explains Peter Metcalfe, Chief Operating Officer of the Hiway Group, a specialist recycling contractor which has extended its capability from road recycling to capturing and recycling the world's natural energy sources by finding and implementing new methods of zero-cost energy production, free of contaminants and not depending on fossil sources.

Mr Metcalfe explains that one of the key benefits of the Hybrid lighting system is that it can be quickly and easily installed with no cabling or connection required. "Power generation is virtually 24/7 as it's not very often there is both no sun and wind. "

In fact, Mr Metcalfe says, the new generation lithium-ion batteries had a higher charge after the first night's operation because the turbine was generating more power than the light was using. "During the day both solar and wind are generating with no use of the light so there is never any shortage of power and the best thing is it's all free to our customers."

The turbine design and materials are as equally sophisticated as the generator it surmounts. "The blades are mounted vertically instead of the traditional horizontal approach and crafted to ensure all the energy available from the wind is captured for maximum power generation," Mr Metcalfe explains.

"The blades are also made of a special graphene composite which is not only extremely strong, but also self-cleaning so no maintenance is required on the lighting."

Eolgreen hybrid street lighting overcomes a common problem with solar-powered systems that sees batteries run down when the solar generation is not sufficient to support either continuous operation or during periods of cloudy or poor weather such as winter when power generation stops. "It is unusual for no wind during these periods so a combination of wind and then solar works effectively," Mr Metcalfe adds.

An added benefit from the combination of power generation and continued generation during the night is the creation of surplus energy which may be capable of being fed back into the grid.

In addition, the Eolgreen hybrid low-speed wind turbine generates power in a 1.7 metres per second light breeze while all other wind generation systems don't start generating power until wind speeds are up to 3 to 4 metres per second. "The generator has been developed by one of Spain's leading universities dedicated to wind generation technologies," Mr Metcalfe advises.

He says the street light is also more than just a street light, as it also captures such data as power levels being generated, wind speeds and lighting time and sends the data to a server for analysis.

The innovative Eolgreen hybrid street lighting system is turning heads in Mount Roskill's Jasper Avenue car park

All the information is available on an online dashboard so an engineer can see from the office how the street lighting is performing. "It also alerts through the web site and notifies an engineer if there is a problem so driving around the network to see if bulbs are out on a conventional system could be a thing of the past."

The installation has been undertaken in conjunction with the Auckland Transport street lighting department, which is "very interested" in the technology.

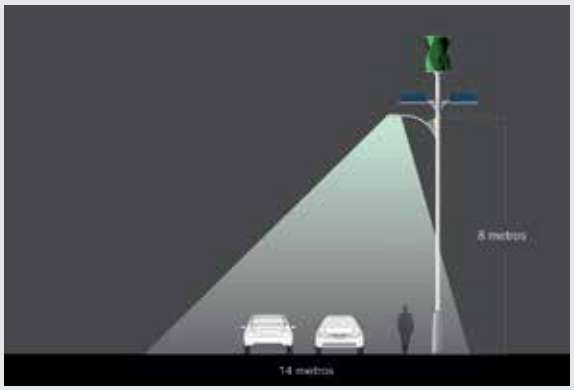
"One of the biggest benefits they see is the ability to locate these lighting systems in more remote areas such as parks and reserves where very expensive cabling requirements have restricted previous applications," Mr Metcalfe says.

"The applications are endless as no cabling is required, and where a cable is connected in urban areas power could be pushed back into the electrical network."

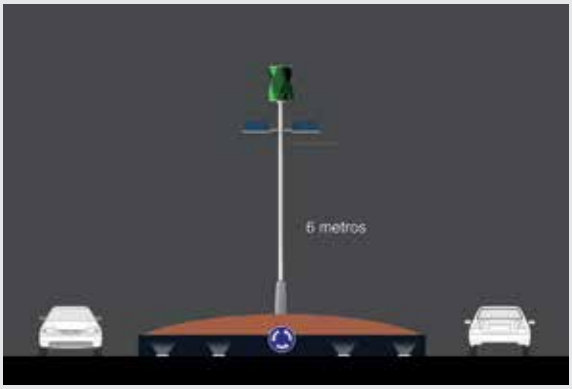
The Hiway Group sees "tremendous potential" in Eolgreen's remote operation capability in numerous other installations, including remote intersections, car parks and remote villages where very expensive cabling requirements have restricted previous applications.

Technical data

Model 6 meters: F104-31 LED 30S/3000 Lumen Flux



Model 8 meters: F104-45 LED 45S/4500 Lumen Flux



Mod. 6 meters: F104-6M - BEACONS

Wind Turbine

- Turbine boxer type – vertical axis
- Weight 28kg
- Structure made by composites
- Finished in epoxi ref. 6005
- Inclusion of "graphene" in surface finish
- Advantages: Resistance, fatigue, self-cleaning
- Starting speed: 1"4 m/s
- Minimum starting torque: 0'2 N

"We believe it would be particularly beneficial in the Pacific, where power costs can be expensive, power supply often disrupted and remote locations make getting a power cable to the site simply cost-prohibitive," Mr Metcalfe says.

Peter Metcalfe is Chief Operating Officer of Hiway Group Ltd, which specialises in recycling and stabilisation technologies throughout New Zealand, Australia and the South Pacific